

WHAT IS CLAIMED IS:

1. A method for driving a solid state imaging device including a plurality of vertical shift registers each for vertically transferring information charges accumulated in a plurality of light receiving pixels arranged in matrix, and a horizontal shift register for horizontally transferring information charges vertically transferred and received in line units, in which the information charges are independently vertically transferred from light receiving pixels in an odd line and from light receiving pixels in an even line, the method comprising:

an accumulation step of accumulating information charges generated in the plurality of light receiving pixels during a first period in portions of vertical shift registers corresponding to each odd line and in portions of vertical shift registers corresponding to each even line;

a first compounding step of vertically transferring the information charges accumulated in the portions of vertical shift registers corresponding to each odd line to the portions of vertical shift registers corresponding to each adjacent even line, compounding the information charges originated from the portions of vertical shift registers corresponding to each odd line into the information charges accumulated in the portions of vertical shift registers corresponding to each adjacent even line, and holding resultant information charges in the portions of vertical shift registers corresponding to each even line;

an additional accumulation step of accumulating information charges generated in a light receiving pixel in each odd line during

a second period in the portions of vertical shift registers corresponding to each odd line, and of accumulating information charges generated in a light receiving pixel in each even line during the second period in the portions of vertical shift registers  
5 corresponding to each even line in addition to the information charges that are already accumulated therein;

a second compounding step of transferring the information charges accumulated in the portions of vertical shift registers corresponding to each odd line and the information charges  
10 accumulated in the portions of vertical shift registers corresponding to each even line to the horizontal shift register, and compounding in the horizontal shift register the information charges originated from the portions of vertical shift registers corresponding to each odd line into the information charges  
15 originated from the portions of vertical shift registers corresponding to each even line; and

a step of driving the horizontal shift register after the second compounding step to obtain an information output of the solid state imaging device.

2. A driving method according to claim 1, wherein

the second period is determined such that the amount of information charges generated in each of the plurality of light receiving pixels during the second period is equal to or less than  
25 the charge storage capacity of the light receiving pixels.

3. A driving method according to claim 1, wherein

the second period is determined such that the amount of

information charges generated in a light receiving pixel corresponding to a maximum luminance portion of an object during the second period falls within a predetermined range relative to the charge storage capacity of the light receiving pixel.

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4. A method for driving a solid state imaging device including a plurality of vertical shift registers each for vertically transferring information charges accumulated in a plurality of light receiving pixels arranged in matrix, and a horizontal shift register for horizontally transferring information charges vertically transferred and received in line units of line, in which the information charges are independently vertically transferred from light receiving pixels in an odd line and from light receiving pixels in an even line, the method comprising:

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15 an imaging step of accumulating during a first period the information charges generated in the light receiving pixels in each odd line and of accumulating during a second period the information charges generated in the light receiving pixels in each even line, the second period being shorter than the first period; and

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20 a compounding step of vertically transferring the information charges accumulated in the light receiving pixels in each odd line and the information charged accumulated in the light receiving pixels in each even line to the horizontal shift register after the imaging step, and of compounding the information charges originating from the light receiving pixels in each odd line with the information charges originating from the light receiving pixels in each even line;

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a step of driving the horizontal shift register after the

compounding step to obtain an information output of the solid state imaging device.

5. A driving method according to claim 4, wherein

5 the second period is determined such that the amount of information charges generated in each of the plurality of light receiving pixels during the second period is equal to or less than the charge storage capacity of the light receiving pixels.

10 6. A driving method according to claim 4, wherein

the second period is determined such that the amount of information charges generated in a light receiving pixel corresponding to a maximum luminance portion of an object during the second period falls within a predetermined range relative to  
15 the charge storage capacity of the light receiving pixel.

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